THE UNIVERSITY OF WASHINGTON

Arboretum bulletin

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Arboretum bulletin

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COVER PHOTO:

Arctostaphylos auriculata

PHOTO BY: CAMPUS STUDIOS

Early History of the University of Washington Arboretum

Gordon D. Marckworth*

As many of you know, Dr. Henry Schmitz was writing a history of the College of Forestry and one chapter of that history was devoted to the University of Washington Arboretum. The bulk of what I have to say today is taken directly or indirectly from his history of the College of Forestry.

In the opening sentence of the chapter on the Arboretum he says: "Although the evidence is skimpy, there are indications that Edmond S. Meany, who shortly after his election in 1891 as a member of the Legislature from Seattle became chairman of the legislative committee concerned with the acquisition of a new campus for the University, promoted the project in part by claims that it would provide an arboretum for the State as well as a campus for the University. If this be true it was undoubtedly a method to elicit support from the lumber industry, which was not entirely without influence at that time in the state legislature. . . . It is certain . . . that the development of an arboretum on the new campus was an important consideration for some years after the University moved from the old to the new site."

"On September 4, 1895, the University opened its doors on the new location. What is now known as the campus was designated in the University catalog for that year as "Grounds and Arboretum" and the evidence is perfectly clear that it was the intent of the University administration to develop this area as an arboretum. Attention is called to the fact that large clearings had been made about the buildings and that much of the remaining forest had been cleared of timber and brush, leaving a few groups of larger firs and acres of young growth including nearly all the species of trees indigenous to western Washington. More importantly, from the standpoint of the development of an arboretum, attention is called to the setting out of a few trees among the wild growth and to the establishment of a nursery of young trees."

There is no evidence of how extensive these plantings were. However, as the annual budget was only $45,000, the expenditure of any money for this purpose would indicate an interest on the part of the Regents in developing an arboretum.

In 1899 the Legislature appropriated funds for building two dormitories, one for men and one for women, later to be named Lewis Hall and Clark Hall. In deciding where the buildings were to be placed the Regents adopted a plan for the development of the grounds. In a discussion of this plan it is stated that: "One of the main reasons urged for the dedication of this land to University purposes was that in addition to all other needs of the institution, there could be established here a scientific arboretum for the cultivation, care and study of all kinds of trees and plants that will thrive in this climate. There are now on the grounds large groves of the original forest trees and many of them are being prepared. Many others have been planted and are now thriving."

On Arbor Day in 1898 the Seattle Park Department presented the University 50 assorted oaks and 50 honey locusts. Subsequently the Park Department presented to the University 2200 trees embracing almost thirty species new to the grounds. Col. A. J. Blethen made $100 available for planting

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**Footnote*: The following article was presented to the members of the Seattle Garden Club on August 24, 1965, by Dean Emeritus Gordon Marckworth in lieu of a talk scheduled to have been given by Dr. Henry Schmitz prior to his death, January 31, 1965.

the trees on Arbor Day. "At this rate of progress," the Administration stated proudly, "It will be but a few years before the University will have an arboretum as fine as any possessed by colleges and universities anywhere in the world. The educational value of such an arboretum is quite apparent to anyone who comprehends the progress being made in the sciences of botany and forestry."

In 1903 a superintendent of grounds was employed and a small appropriation set aside for improving the campus. Further gifts of plants were made by the Park Department, and seeds were received from California; the U.S. Department of Agriculture; Ottawa, Canada; Ohio, and Pennsylvania. A seed and plant exchange was set up with eastern collectors.

In the following three or four years the campus was designated as "Grounds and Arboretum." By June 1904 the campus became known as the "Grounds" and after 1906 no further reference was made in the University Catalogs to the campus serving as an arboretum.

That Prof. Meany, who established the seed exchange program, did not lose his interest in an arboretum is evident by the fact that his garden was largely given over to the growing of trees from seeds received through the exchanges. Prof. Meany lived on Brooklyn Avenue, only a few blocks from the campus, but beyond the city water mains. As a result he had to carry water in pails to his nursery beds.

When the campus was cleared for the Alaska Yukon Pacific Exposition, many of the trees planted by Professor Meany were destroyed. A few years later, Dean Winkenwerder, with the enthusiastic support of Prof. Meany, proposed to President Franklin Kane that the entire area below the railroad tracks be set aside for arboretum purposes. President Kane approved the proposal and the area was designated on maps of the campus as "Arboretum." No money was available for the development and little was done except to develop a nursery by the College of Forestry. Trees were planted in the arboretum by the students in connection with their class work in silviculture.

Progress was slow and pressures developed for the construction of a golf course in the arboretum area. It was argued that both could be developed in the same area, with trees on the edge of the fairways and greens. Eventually the golf course took over the entire area and in late 1923 Dean Winkenwerder gloomily said that he had "lost all hope of ever developing an arboretum on the University campus."

Although Dean Winkerwerder lost hope of developing an arboretum on the campus, he did not lose hope of the University developing an arboretum. Furthermore he felt that such a development might well have the support both of the City of Seattle, through its Park Department, and the Universtiy. He suggested to President Suzzalo that the Washington Park area would fulfill the requirement. Dr. Suzzalo, who had approved transforming the arboretum into a golf course, gave enthusiastic support to this development and solicited the help of the Seattle Rotary Club, the Chamber of Commerce, and the Park Department.

As a result, the Board of Park Commissioners on February 6, 1924 passed the following resolution: "That the entire area of Washington Park be, and hereby is set aside for a Botanical Garden and Arboretum. And be it further resolved, that the Board of Park Commissioners grant to the University of Washington the privilege of using certain buildings and greenhouses in the botanical garden and arboretum, by the students of the University in the study of plant life. It is the wish and hope of the Board of Park Commissioners to work in accord with the University of Washington in this development and make the Arboretum and Botanical Garden one of the chief centers for accurate botanical and gardening information on the Pacific Coast."

The first work on the area was provided

by men transferred from Seward Park who were employed through "unemployment relief funds" and who began clearing a site for a nursery. Mr. R. J. Fisher, a member of the Board of Park Commissioners, was given the job of supervising and directing the activities in the area.

Dr. Suzzalo appointed a University Committee to assist the Board of Park Commissioners, which included Dean Winkenwerder, Forestry; Dean Charles W. Johnson, Pharmacy; and Dr. T. C. Frye, Botany.

Setting aside an area for arboretum use is a long way from developing an arboretum. The first called only for a resolution to the Board of Park Commissioners. The latter called for funds, for plans and for enthusiastic supervision and direction. Dean Winkenwerder and Mr. R. J. Fisher continued unceasingly to stir up interest and seek support. Dean Winkenwerder even went so far as to visit arboreta in Europe (at his own expense) in order to get a broader background. Upon his return he prepared a mimeographed report which was given wide circulation. He was convinced that any real development could not take place until adequate funds were provided on an annual basis. He felt that financial problems could be solved through an endowment fund of from $200,000 to $500,000. This could be supplemented by special gifts. As the University was in trouble both financially and administratively there was no likelihood of help from that source.

Dean Winkenwerder suggested that some organization be set up to solicit private financial support. The stock market crash of 1929 and the depression which followed did not create a situation which would be conducive to private financial help. Nevertheless, the Arboretum and Botanical Garden Society of the State of Washington was incorporated under the Laws of the State of Washington on April 15, 1930.

The objects of the corporation were: "To establish and maintain a botanical garden, arboretum and herbarium to be located at Seattle, Washington and other places as may be advisable, for the collection and culture of plants, flowers, shrubs and trees; the advancement of botanical science and knowledge; the prosecution of original research therein and on kindred subjects and affording instruction in the same; the development and exhibition of ornamental and decorative horticulture and gardening; for the entertainment, recreation and instruction of the people."

The articles further provided that the corporation could "lease, acquire, hold and dispose of real and personal property, build or erect buildings; receive and hold in trust, or otherwise, funds and all kinds of property received by gift, devise, bequest, annuity or otherwise; etc., etc."

Dr. Schmitz points out that Article 7 of the by-laws of the Society is of special interest since it indicates clearly the aspirations of its members. Article 7 states: "Whenever this society shall have raised or secured by subscription, the sum of one hundred thousand dollars, for successfully establishing and prosecuting the objects of this society, as set forth in the articles of incorporation, then shall it request the City Council of the City of Seattle to lease for a term of ninety-nine years, at an annual rental of one dollar per year, the following described lands, viz., all of the lands embraced in Washington Park, Foster Island, the shore lands of Lake Washington now owned by the City of Seattle, Montlake Park, Canal Reserve and any other land now owned, or hereafter owned by the City of Seattle adjoining the above described lands, to this society. The said grounds shall be open and free to the public daily, including Sundays, subject only to such restrictions as the proper care, culture and preservation of said arboretum and botanical garden may require; and its educational and scientific privileges shall be open to all alike, upon such necessary regulations, terms, and conditions as shall be prescribed by the managers of these departments."

Soon after the incorporation the following officers were elected: Dr. E. Weldon Young, President; Mrs. Anna T. Milburn, V.P.; Dr. Cecil L. Tenny, V.P.; Mr. R. D. Merrill, Treasurer; Mr. R. J. Fisher, Secretary. In addition to the officers the following were elected trustees: Mr. A. F. McEwan, Mr. Asahel Curtis, Dr. T. C. Frye, Dean Hugo Winkenwerder, Mr. Charles W. Saunders, Mr. David Whitcomb, Mrs. Francis P. Larrabee, Mr. A. O. Fechter, Mr. Herbert C. Moss, and Mrs. R. D. Merrill.

Membership was open to all who subscribed to the purposes of the Society as set forth in the articles of incorporation. There were nine classes of membership with dues varying from those of an annual member at $10 per year to a benefactor at $100,000.

There seem to be no records of the success of the membership campaign. However, considering the magnitude of the depression, which was increasing daily, it was safe to assume that no large sum of money was collected.

Limitation on funds still hindered development, but with the depression came public funds for unemployment relief. Some work was started in clearing the Washington Park area in November 1931. By the summer of 1933 considerable work was underway. Unfortunately its objective was to give work and not to develop the arboretum. In other words this provided an opportunity and a threat.

In the fall of 1933 Mr. and Mrs. Loren Grimstead invited a small group to their home to explore the possibilities of reviving the idea of developing an arboretum and botanical garden in fact as well as in name.

It so happened that Mr. Loren Grimstead was advising Governor Martin on the use of federal and state funds to ease the unemployment situation, and one of the major problems was to find worth-while projects near centers of unemployment. Among those attending this meeting at the Grimsteads were Dean Hugo Winkenwerder and Mr. Herbert Ihrig.

This group decided to attempt to secure federal funds for the project, but recognized that it would be necessary to have a sponsor. It was quite evident that this small group could not qualify as the sponsor. Something official was needed.

Mr. and Mrs. Grimstead called a meeting of a larger group at the Broadmoor Golf Club House to discuss ways and means of getting federal funds. As a result of this meeting, a small committee was formed charged with the responsibility of creating a legal entity, with the University as the operation agency. Mr. O. B. Thorgrimson was selected to draw up the instrument and after study drafted a proposed agreement between the City of Seattle and the University of Washington similar to that between the City of Boston and Harvard University.

A short time later this committee under the leadership of Mayor Charles L. Smith appeared before the Board of Park Commissioners regarding the Arboretum project.

This meeting was the turning point of fifty years of frustration on the part of those attempting to develop an arboretum and botanic garden in the Northwest. As a result of this meeting there was appointed a temporary committee to make recommendations on the financing and plans for the arboretum development.

The committee appointed consisted of Mr. Donald Graham, Mr. O. B. Thorgrimson, Mrs. Arthur Kraus, Dean Hugo Winkenwerder, Mr. Herbert Ihrig and Mrs. Loren Grimstead. The membership of this committee is of great interest, for it includes two individuals who probably have had more to do with the development of the arboretum than any others, the two individuals referred to are Dean Hugo Winkenwerder and Mr. Donald Graham. Dean Winkenwerder retained his interest until his death and Donald Graham, after thirty years, still retains an active interest in the Arboretum.

This committee presented a proposed

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Arboretum Waterfront Trail

Eric W. Hoyte*

Since early January this year the people of Seattle, Washington have been able to experience on foot a new environment.

Through the collaboration of many people in many agencies, a floating pedestrian walkway has been constructed through a wild marsh area and across two waterways to form a connection on the south side of Union Bay between the University of Washington Arboretum and the Lake Washington Ship Canal. In the heart of a metropolitan area people may now walk out safely into a natural marsh for exercise, enjoyment of the natural scene and to observe the cycle of the seasons in an unusual setting.

When the second Lake Washington Bridge was constructed in 1963, some forty-five acres were sliced off the north end of the Arboretum and the concrete convolutions of the bridge approach arose from an area of lagoons and marshes. An underpass on Foster Island still permitted access from the Arboretum to the water of Union Bay, but this link was so tenuous that University officials resolved to make the best use they could of the area remaining between the bridge approach and Union Bay. As part of the master plan for the Arboretum prepared in 1964, Sasaki, Dawson and Demay, Landscape Architects, indicated potential development of this area with much planting, an extensive nature trail, foot bridges and boat landings. So that, in a generalized manner, the concept of a waterfront trail was begun and accepted by University of Washington and City of Seattle officials to whom the Master Plan was presented.

Soon after acceptance of the Master Plan, an application to proceed with the waterfront development was filed with the U.S. Army Corps of Engineers, which has jurisdiction over construction adjacent to navigable waters. The first roadblock to the development seemed to be a log dump, operated for many years by the City Engineering Department and the Army Corps of Engineers, right in the middle of the marsh area. Floating burnable debris, from snags to abandoned houseboats, used to be collected from the whole of Lake Washington and the City of Seattle waterfront, to be burned on this spot when the wind would adequately disperse the smoke. Besides being unsightly, the burning of the dump was not strictly in conformance with the anti-pollution regulations of the metropolitan area. Fortunately, another solution was found and now the water-borne debris is disposed in a landfill project up the coast from Seattle.

Two other hurdles which were negotiated during the process of the trail design was first the necessity to assure the State Department of Natural Resources that the movement of fish to spawning grounds in the lagoons should not be impeded, and second, that the trail construction would not obstruct an extension of the freeway system in the form of a tunnel to the north of Union Bay.

Then, in the Spring of 1966, matching funds became available through the Washington State Interagency Committee for Outdoor Recreation from the U.S. Department of Interior for urban trails. As landscape architect on the staff of the University, it was my suggestion that the previously proposed nature trail could be designed as a floating walkway to run through the area leaving the marshes intact at a cost approximating the sum that might be available. With the approval of the City and University officials, my design for a waterfront trail was submitted and we were informed through the Interagency

*Mr. Hoyte is Landscape Architect, University of Washington.

Arboretum Waterfront Trail
Fig. 5—Photo by: Jack H. Johnson

Committee that the project had received an award of $45,000 in matching funds from the U.S. Department of Interior. This was the largest grant awarded for urban trails by the Department and it was apparent that the conservation aspect of the trail (preservation of the marshes) played a large part in the award.

Following award of the grant, a contract was signed between the Interagency Committee, which would administer the grant, with the University for the completion of the project. Throughout the project very valuable advice and assistance was received from Mr. Sydney Malbon, landscape architect in the Regional Office of the Bureau of Outdoor Recreation, Department of the Interior, and from Mr. Einar Hendrickson, Administrator of the Interagency Committee and his assistants. Then the University, through the Board of Regents, appointed Mr. Joseph Millegan as engineer and the detailed design began.

The trail had been thought of as a cedar plank walk resting on styrofoam or other logs for flotation, but as maintenance and replacement items mounted, a new method of construction was suggested by Mr. Millegan using hog fuel or wood waste from lumber mills. The walkway through the marsh area, it was agreed, was to be built on a hog fuel base with a heavy timber frame like a ladder laid down and bolted together for continuity. More hog fuel was placed within the frame and the whole surface topped with three inches of crushed rock. A sheet of plastic was laid below the crushed rock to minimize the possibility of plant growth starting in the hog fuel. For continuity of surface and durability, concrete pontoons were chosen for the lengths of walkway in open water together with two welded steel bridges to permit the passage of canoes and small boats.

The old log dump area, after final burning, was leveled and beautifully finished by the Corps of Engineers by simply dumping peat from the bottom on top of the exposed logs. Within three months there was a fine stand of wild flowers and volunteer birch and poplars beginning to sprout. Most of the trail in the marsh winds its way through tall cattail growth, giving the effect in mid-summer almost of a jungle. Left exposed in the log dump along the trail were two immense logs, one of them six feet in diameter, relics of an early Seattle. Several side trails branched out to canoe landings, each with a different view of city, University, freeway, lake or mountains.

Much thought was given to controlling the use of the trail. Motorized traffic of any kind could not be permited, yet pedestrians and bicyclists should be encouraged, so that it was decided to set a row of posts across each end of the trail with sufficient space between the posts for pedestrians or bicycles, but not for larger vehicles. Then, a hinged gate was set in a ramp at the west end to keep out stray dogs, with a notice to dissuade people from taking dogs out into the marsh, in order to preserve as much of the wild life as possible.

The original design drawing on which the grand award was based showed a network of pedestrian walks from the south end to the north end of the Arboretum including the waterfront and extending to the Montlake Bridge, then along the north side of the canal to circle the waterfront of the University on Union Bay. The funds that were available after the bids were in were sufficient to construct the essential part of the trail from Foster's Island west to the mainland and also some 500 feet of walkway on relatively solid ground, weaving through scrub willow, from the main land entrance north to the canal reservation line. The completion of the trail network in the long range plans of the University will make a significant milestone for pedestrian movement in Seattle.

Besides becoming a conservation project the trail is also in process of becoming a

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Manzanitas in the Arboretum

J. A. Witt

Little apples or manzanita the Spanish called them when they first discovered that group of broad leaved evergreen shrubs we now know as *Arctostaphylos*. Many of the early California explorers and missionaries were no mean botanists and they probably recognized that these striking plants were related to *Arbutus andrachne* and *A. unedo* of their homeland. A few who may have been familiar with the flora of northern Europe may even have noted the similarity of the fruit and flowers of these California plants with those of the Barberry, *Arctostaphylos uva-ursi* found throughout the northern temperate areas of the world.

Undoubtedly these early colonists had mixed feelings about the *Arctostaphylos* they found so plentiful. The fruit they used as food, shared with most of the native fauna, the wood for fires and surely some must have been sensitive enough to enjoy the beauty of form and habit of the plants. On the other hand, they must have hated and feared a ride through the dense chaparral, often nearly a pure stand of manzanita, whose stiff and tough branches make travel anything but easy.

Botanists recognize about 50 species of *Arctostaphylos*, one species is circumpolar, the rest are western American with the center of the genus in California. Some 40 species are found there with innumerable varieties. Oregon boasts about eleven and Washington has three species, and a hybrid.

The Arboretum has over the years been active in introducing and testing many manzanitas with varying degrees of success. A count of those actually planted on the grounds show a total of 29 species, three botanical varieties and 16 clones or horticultural varieties. Of these there are now twenty species, two varieties and thirteen clones still alive: a not too bad record when one considers the southern origin of the genus and the differences in rainfall between Seattle and the dry southwest.

The *Arctostaphylos* are to be found in several places in the Arboretum since there is no one collection. The Rock Garden area has the largest number of plants, most of which have been there for about six years or less. They are on the bank of the east side of Lake Washington Blvd. E. north of the main rock work, and in a small bed north of the service road into the Rock Garden on the west side of Arboretum Drive E.

The oldest and best established collection is on the bank above the south parking lot for Rhododendron Glen. There are a few plants on the north bank of the Glen and between Arboretum Drive E. and the service road at the head of the Glen. Woodland Garden has specimens of the three Washington natives and the hybrid between two of them. The final area is in the vicinity of the offices and greenhouses.

With the exception of the Woodland Garden, all locations have two factors in common: well drained loose soil and exposure to the south, the west, or both.

The manzanitas, despite their diversity of habit have a number of characteristics in common. All have alternate leathery evergreen leaves that are rarely more than three inches long and are often but not invariably gray-green. Their flowers which appear from late winter until late April, are small waxen urn-shaped bells, pink or white. The fruit, which is borne in late summer or early fall, is usually some shade of brown or tan, less than one third inch in diameter and the shape of a flattened apple, the "little apples" of the California colonists. Normally they are in clusters of from three to ten or more. The wood of the manzanitas is hard and crooked, with a polished bark that may be brown, red-brown, or nearly purple-black, and is some-

times peeling after the manner of their close relative, the madrona, *Arbutus Menziesii.*

Of the various species, varieties and cultivars that are or have been growing in the Arboretum, the following nine seem to have been among the best for hardiness, attractive habit and beauty of flower:

Arctostaphylos Andersonii—
heartleaf manzanita

A large erect shrub to ten feet tall (ours are seven feet tall in twenty years) with dark reddish-brown smooth bark. The leaves are grayish green, tightly clustered about the branches, one to two inches long with a heart-shaped base. It flowers early in January with tiny pink flowers in small clusters nearly hidden by the foliage. The fruit is reddish brown, about a quarter inch in diameter. Heartleaf manzanita has been a durable, attractive plant good for flowering and unusual leaf texture. It has suffered from white fly but control with malathion is easy. Native from San Francisco south to the Santa Lucia mountains, Calif.

A. auriculata

This species is considered to be a variety of *A. Andersonii* by some botanists and it does have a somewhat similar habit and leaf. Our plants are six feet tall and as much across, twenty years old. The stems are smooth dark red. The leaves about an inch and one half long clasp the stems in tight whorles and are gray-green. The flowers appear in late March and are in tight racemes of pale pink bells. It is native to the California coastal area north of San Francisco.

A. canescens—hoary manzanita

A sprawling plant, ours at twenty years are about seven feet tall and six feet across wtih strikingly polished dark red-brown stems. The leaves are frosted gray-green about two inches long. The flowers come in early April in loose clusters and are nearly white. The fruit is about a third of an inch across, brown. This is one of the most handsome of the gray foliaged species and is native through northern California to southern Oregon.

A. columbiana—hairy manzanita

This is our largest Washington native *Arctostaphylos* capable of being a small tree with erect, often irregular, habit. The bark is red-brown to shining brown. Its leaves are oval, up to two and a half inches long, gray green. The short pendulous racemes of small pink to white flowers appear in late March and are followed by tight clusters of rich brown quarter-inch wide fruit in early fall. This is one of the species that seem to grow well in heavy clay although it doubtlessly prefers a better drained soil. It is found native from northern California to British Columbia and is probably the hardiest of the tall growing manzanitas.

A. manzanita—common manzanita

The specimen at the south end of the parking lot for Rhododendron Glen is about fifteen feet tall and nearly twenty across. It was planted twenty-one years ago and has withstood some very cold weather without damage. It is a spreading shrub with a trunk nearly eight inches in diameter at the base with a rich brown bark. The leaves are shining green, oval, about an inch and a half long and nearly as wide. It flowers in late December or early January with two to three-inch long clusters of waxen white bells about one third of an inch long. The fruit is brown when ripe. This is perhaps the most attractive of the *Arctostaphylos* species for early blooming and is native throughout most of northern California.

A. *x media*

This hybrid between *A. columbiana* and *A. uva-ursi* was described from material collected in Mason County, Washington. It is a confused plant. Since one parent is tall growing and the other is prostrate it can hardly make up its mind as to which it will be. Usually it is a low trailing shrub, hugging the ground but now and then it shoots skyward, with a respectable trunk,

remembering perhaps its taller parent. The leaves are usually long and narrow, and the pink flowers occur in pendulous clusters in May. The various plants in the Arboretum have never set fruit. This hybrid is usually available in local nurseries and is very good for covering rough banks. It also makes an attractive bonsai plant.

A. nevadensis—pinemat manzanita

A low prostrate to sprawling shrub many times wider than tall with brown bark that exfoliates in small flakes. The leaves are narrow, up to one and one half inches long, shining green. In April the small racemes of white to pinkish flowers develop, not as showy as many other manzanita species, to be followed by the dark mahogany brown fruit. Our oldest specimens are in Woodland Garden, planted in 1949 and unfortunately are suffering from a severe leaf fungus that has nearly defoliated them. This same pest also attacks the hairy manzanita and kinnikinnick. It may be controlled by using a copper spray such as Bordeaux mixture when the new foliage is about half developed. Pinemat manzanita is native in our local Cascades and south to northern California. It also is much used in local landscaping as a ground cover. Most plants so used are collected in the wild and there is some risk that we will reduce its population to a dangerously low level if indiscriminate collecting keeps up.

A. Stanfordiana—Stanford manzanita

This is one of the best of the California *Arctostaphylos* for beauty of form and flower. Our twenty-year-old plants are spreading shrubs with erect thin branches above five feet tall and eight feet across. The bark is red brown and shining. The leaves are slender, to about two inches long, bright shining green with slightly reddish petioles. The flowers are a soft pink, small but in large drooping clusters in late March or early April and are among the most handsome of the group for bloom. A selected clone 'Fred Oehler' has a lower habit and is somewhat more spreading, with an unusually heavy crop of pink flowers. The Stanford manzanita is native in northern California, north of the Bay region.

A. Uva-ursi—kinnikinnick, bearberry

This is probably the most widespread member of the genus, found in northern Europe, northern Asia and through the northerly sections of the western hemishere as far south as California. Probably kinnikinnick is the most widely used of the genus since it will grow well in cold areas and makes a tight low groundcover. The small dark green leaves and racemes of pinkish flowers followed by red berries combine to make it a favorite with all gardeners. There are numerous forms and selections; the Arboretum has five clones including the small-leaved 'Point Reyes' and the vigorous large-fruited 'Ed Wood Form'.

The above nine species have been the most successful in the Arboretum, but there are others that are as attractive or perhaps more so than these but which for some reason or another have not done as well. The *A. densiflora,* Sonoma manzanita, forms and hybrids are especially beautiful with small white to pink flowers in early spring, striking red to purple-brown stems, and fine-textured foliage. Unfortunately they are apt to be cut back by a hard frost and aren't reliable. Several others that have survived for a number of years are less attractive or are also borderline hardy and can't really be recommended.

Manzanitas would probably be much more popular with northwest gardners if they didn't have two serious drawbacks. First, they need a sunny well-drained soil, preferably on a slope and this is often not an easy location to find. Second, they are notoriously difficult to transplant and must be container-grown to have any chance of success. However, if the gardener has the right site and can find a source of plants there are few shrubs so distinctive and handsome for the home garden. A visit to the Arboretum's collections will convince the most skeptical of this.

The Fruits of Sarcococcas

B. O. Mulligan

As a group the species of *Sarcococca,* for which the appropriate common name of Sweet Box has been coined, are most valuable low growing, shade loving evergreen shrubs for the entire Pacific Coast region. Flowering in Seattle from late January (*S. Hookeriana* var. *digyna* and *S. confusa*) until early March (*S. humilis*) the fragrance of their small whitish flowers pervades the air around them; if planted near a pathway in the garden it can be enjoyed in passing. These flowers, produced in clusters at each leaf axil up the stems, and separated into male and female individuals, have no petals and thus rely on their scent to attract flies for pollination purposes. The male flowers are more prominent because of their protruding stamens, and more numerous in the case of *S. Hookeriana* var. *digyna* than the female. The number of styles in the female flowers may be a diagnostic character, being always three in *S. confusa* and *S. ruscifolia,* two in *S. Hookeriana* var. *digyna* and *S. humilis.* *S. Hookeriana* var. *digyna,* a native of W. China, is further marked by the dull red coloration of the stems and the bracts surrounding the flowers. *S. humilis* does not possess this, although in foliage characters it is very similar, as in its stoloniferous but lower habit. The former is commonly about thirty inches tall, the latter only half that height.

On the other hand, *S. confusa,* of which the precise habitat is still unkown, and *S. ruscifolia* from central and western China, are clump forming and do not spread by underground stems. The former, however, bears shining black fruits, but in the latter these are red, although as it is less

Fruits of *Sarcococca humilis* on left, *S. Hookeriana* var. *digyna,* right.
Fig. 6—Photo by Wm. Eng

hardy they are not often produced here in any quantity.

The photographs show the characteristics of these four species in fruit. The descriptions will add more details for those interested.

Sarcococca confusa

Fruits produced in axils of leaves, held upright or at an angle of 40°-80°, one or two together, if the latter then on a very short peduncle (± 1 mm. long); pedicels glabrous, 3/16 - 1/4 in. long, with a pair of small basal bracts and several bracteoles; sepals triangular-ovate, acute, with hyaline ciliolate margins. Leaves often fallen from fruiting branches.

Fruits more or less oblong, sometimes slightly flattened dorsi-ventrally, 5/16"-3/8" long, 1/4"-3/8" wide, glossy, black, apex blunt, with three styles remaining base rounded, clasped by the sepals.

Seeds ovate, acute, usually solitary in each fruit, or two in larger ones, 3/16"-1/4" long; pulp sweetish, juicy.

S. *ruscifolia*

Fruits produced 1-2 in leaf axils; leaves usually still present, held up at an angle of usually 45°-60°, but variable in this character; pedicels about 1/4" long, minutely puberulous, subtended by a pair of very small basal bracts and with a regular series of bracteoles up to the calyx; sepals triangular, acute, hyaline, ciliolate, appressed to the fruit.

Fruit shape variable, generally obovate to subglobose, apex usually blunt or flattened, 5/16-3/8 in. long and wide, bright red, crowned by three persistent styles. Pulp rather dry and mealy, sweetish; seeds 2-3 in each fruit, broad ovate, ventrally flattened, acute, shining black, 1/4 in. long, 3/16 wide.

S. *Hookeriana* var. *digyna*.

Fruits produced 1-2 from axils of leaves on extremely short (about 1/16") bracteate reddish peduncles; if two, then fruits often diverge at near right angle to each other; pedicel reddish, glabrous, about 1/4" long,

(Continued on Page 47)

Sarcococca ruscifolia in fruit. Fruits red.
Fig. 7—Photo by: Wm. Eng

National Forest Garden

The question is frequently asked, "Can we pick flowers or leaves in National Forests?" or, "Can we dig small plants for use in our own garden?" These two questions have been answered by the U.S. Forest Service in a small pamphlet entitled, "The National Forest Garden," which is quoted below.

"Nature has brought together many varieties of plants in the national forest garden. The trees, flowering plants and shrubs are but a few of the scenes giving pleasure to a national forest visitor.

"A lone trillium or wood violet along a trail, a mass of native rhododendron in full bloom in the shadow of tall evergreens or a vine maple in autumn dress overhanging a stream are treasures of your national forests.

"The beauty and simplicity of these natural settings furnish a pattern for your own native garden. Under multiple use management, provisions have been made for gathering native plants in the national forests for personal use.

"Picking flowers, cutting foliage and digging plants, if overdone, can be damaging. For this reason you are asked to follow a few simple rules.

"Plants, shrubs and tree seedlings under two feet in height of non-rare species may be gathered in limited quantities for personal use.

"Gather only:

1. For personal use.
2. Outside designated recreation and natural areas.
3. 100 yards from any road or trail.
4. With special approval of a forest officer the following rare plants:

Alpine pyrola (*Pyrola asarifolia incarnata*)
Brewer spruce (*Picea breweriana*)
Broadleaf firechalice (*Zauschneria latifolia*)
Californiapitcher (*Darlingtonia californica*)
Calypso (*Calypso bulbosa*)
Coast Monkeyflower (*Mimulus dentatus*)
Coast Rhododendron (*Rhododendron macrophyllum*)
Common butterwort (*Pinguicula vulgaris*)
Flett violet or Olympic violet (*Viola flettii*)
Floral-firecracker (*Brevoortia ida-maia*)
Indianpipe (*Monotropa uniflora*)
Ladyslipper (*Cypripedium*, all species)
Lilium (including all lilies)
MacNab cypress (*Cupressus macnabiana*)
Narrowleaf sundew (*Drosera longifolia*)
Orchids (*Orchidaceae*)
Oregon bolandra (*Bolandra oregana*)
Oregon kalmiopsis (*Kalmiopsis leachiana*)
Pinesap (*Hypopitys latisquama*)
Red beadlily (*Clintonia andrewsiana*)
Roundleaf sundew (*Drosera rotundifolia*)
Skunklily (*Scoliopus hallii*)
Smooth douglasia (*Douglasia laevigata*)
Webster groundsel (*Senecio websteri*)
Western azalea (*Rhododendron occidentale*)
Woodland pinedrops (*Pterospora andromedea*)
Woodnymph (*Moneses uniflora*)

"Digging and transplanting of native plants, shrubs and tree seedlings should be done only during the dormant season, usually after late summer. Plants should never be pulled up, but dug carefully so the roots will not be injured. Some soil should be taken with the roots to protect them and keep them from drying. This gives the plants a better chance to survive. Dig only in areas where there is an abundance of the plant being gathered. Leave the isolated plant.

"Picking berries, especially blackberries and huckleberries, and gathering mushrooms are popular recreation activities for families visiting the national forests.

"Tree seeds and cones may be collected

for personal use but gathering is limited to that which falls on the ground.

"Seeds of native plants may be collected for personal use.

"For those collecting plants, shrubs or tree seedlings for scientific purposes, or gathering in quantity for public use, a permit is needed. There is no charge.

"Enjoy your national forest garden but treat it kindly."

Bonsai: Dwarfing Trees For Beauty

The art of Bonsai, ancient in Japan when Americans were fighting for their independence, has created a demand for a unique public land resource—stunted trees.

Bonsai (bone-sigh) is the art of growing dwarfed trees. Following contacts with Japanese Bonsai growers during the occupation of that country after World War II, American troops brought appreciation and techniques of the art to the United States. Many kinds of trees can be dwarfed through manipulation of their root development. If root growth is limited, above ground growth is bound by what the root system can feed. Under the skilled hands of the Bonsai artist, a maple or a juniper that would normally reach towering heights stops upward growth after a few feet, yet develops other features characteristic of great age. Miniature trees are planted in trays and pottery and arranged so that the tree becomes a part of a pleasing miniature landscape. It is this aesthetic blending of line and mass into a harmonious whole that distinguishes a true Bonsai from a mere potted plant.

The more twisted, gnarled, and windblown such a tree appears, the greater its value. Value also increases with age. Some Bonsai trees are known to be hundreds of years old.

The Bonsai enthusiast obtains trees in many ways. Some start from seed; some buy potted plants from nurseries. A simple method is to locate stunted trees already dwarfed by natural conditions.

Recently members of the Bonsai Club of Santa Ana, Calif., turned to the public lands in search of trees suitable for Bonsai. Their search led them far from California, but they found what they were looking for in southwest Utah. There among the cliffs and craigs of an austere landscape are trees whose entire life has been a struggle to survive. Shaped by harsh wind and conditioned by broiling sun, these stunted but determined trees, pinyon and juniper, have retained a precarious foothold in the meager soils collected in shallow pockets or in crevices between rocks.

Carefully removed from their natural site and as carefully potted, these trees are easily trained to conform to the graceful lines of classic Bonsai.

[Reprinted from "Our Public Lands" Winter 1968, Vol. 18 No. 1 p. 18]

From Arboretum Bulletin

20 Years Ago — Spring 1948

The following list of shrubs, evergreen and deciduous, will provide a plant for almost any location in the garden, give variety in form, texture and coloring and insure blooms throughout the entire year:

Chimonanthus praecox (fragrans).
Viburnum tinus (laurustinus).
Daphne odora.
Exochorda racemosa.
Enkianthus campanulatus.
Pieris floribunda and *P. japonica.*
Philadelphus (Syringa) many varieties.
Deutzia gracilis.
Spiraea—many varieties.
Forsythia—several varieties.
Chaenomeles (Japanese quince)
Kalmia latifolia.
Abelia grandiflora.
Syringa (lilacs) many varieties.
Caryopteris incana.
Kolkwitzia amabilis.
Hydrangea hortensis and *H. Sargentiana.*
Althaea (Rose of Sharon) (Hibiscus).
Vitex macrophylla and *V negunda incisa.*
Embothrium coccineum.

Roses, shrubby magnolias, camellias and rhododendrons have been taken for granted, the latter alone can supply flowers from late winter into midsummer.

M. R. T.

The Arboretum Bulletin

Vol. XXXI No. 2 Seattle, Wash. Summer 1968

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To keep membership in the Arboretum Foundation in good standing, dues should be paid during the month payable. Active memberships more than three months in arrears will be dropped and The Bulletin will be discontinued.

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All memberships are non-assessable.

Fire at Arboretum Clubhouse, April 7, 1968

This was discovered about 7:00 a.m. on this date by Vernon E. Kousky, a University student, who was walking through the Arboretum. He reported it to Pablo Abellera, living in the foreman's house at the north end of the Arboretum, who called the Safety Division on the Campus. They in turn notified the Seattle Fire Department who sent equipment and extinguished it by 7:50 a.m.

The entire south half of the building was completely gutted and the rest of it badly scorched or charred inside, so that it was not worth trying to repair the remainder. Scorched books belonging to the Seattle Garden Club were removed by Mrs. Rex Palmer, and the crockery and cutlery belonging to the Arboretum Foundation were also salvaged from the cupboards in the kitchen at the north end.

Arrangements were made by the Physical Plant Department to have the remains of the building removed, and this was done during the following week. The cause of the fire apparently was the electric motor used to drive a pump for the sewage system which was located under the S.E. corner of the building, where the fire evidently started. This is the considered opinion of the Fire Department.

Photo Above—
A brick from the Clubhouse fireplace appropriately inscribed—found in the Foundation office the day after the final demolition.
Fig. 8

From the BULLETIN–

20 years ago – Spring 1948

The Arboretum Foundation has moved its offices into a new home at the Arboretum, with an entryway matching that of Mr. Mulligan's staff, which is housed right next door.

Here, it is hoped, the Foundation can be of direct service both to the Arboretum and to the general public.

Our office space was made available through the generous action of the Arboretum Board at the University.

Arboretum Clubhouse after fire.
Fig. 9—Photo by: B. O. Mulligan

Arboretum Waterfront Trail

(*Continued from page 36*)

true nature walk by the addition of interpretive signs. Louis Kirk, photographer and naturalist, has written and furnished illustrations for a series of signs, now under construction, which will spell out for the passersby a graphic story of the visible and invisible life in and around the marsh. These signs, together with the marsh itself, should furnish enjoyment to young and old for many years to come. The trail itself will, I hope, serve as a symbol of man's return from the desperate speed of so much of contemporary life to the human scale of a walkway and the quiet contemplation of the natural scene.

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ARCTOSTAPHYLOS COLUMBIANA

This is a much overlooked native of the Northwest. Although it has been given various generic names, *Columbiana* is the accepted one. It is commonly referred to as Manzanita and should more properly be called the hairy manzanita to distinguish it from its close relative to the south in California.

The plant was first reported by Archibald Menzies at Port Discovery, Washington on May 2, 1792. "I likewise met here with a new species of Arbutus with glacous leaves that grow bushy and 1 to 3 (4) meters high."

It is a treelike shrub of the height described by Menzies, with small pale green leaves accentuated by the branches which are purplish red. It bears numerous small white or pinkish flowers 6 to 7 inches long, in the early spring.

To bring out the true beauty of the shrub, it should be pruned annually (and this can be done anytime) by thinning out the leaves so that the beauty of the older wood may be clearly seen.

It is not an easy plant to move and it is perhaps for this reason that it is not more widely used in landscaping. However, once established, with good drainage, it is very hardy and a beautiful addition to any garden.

M. C. Collarino

Early History of the University of Washington Arboretum

(*Continued from Page 33*)

agreement to the Board of Park Commissioners on November 8, 1934, which with minor legal amendments was approved by the Board of Park Commissioners and the University Board of Regents on December 6, 1934. With the signing of the formal agreement between the City and the Uni-

versity, the Arboretum gained legal standing and was able to qualify for federal funds. In addition it was able to put into effect some of the early dreams and plans of its sponsors. This then covers some of the highlights and the background of the early development of the University of Washington Arboretum. While gaining legal standing and federal funds, its troubles were not over, and even today, thirty years after the signing of the agreement, the Arboretum is plagued with many problems and still needs the support of its friends, just as it did in earlier days.

The Fruits of Sarcococcas

(*Continued from Page 41*)

with usually 3 pairs of bracteoles; calyx segments triangular, acute, very finely ciliate on margin.

Fruits globose or nearly so, usually slightly flattened top to bottom, 1/4″ diam., blue-black, bearing two separate styles on the top; pulp sweetish, seeds 2, dark brown, ovate, flattened on one side; acutish at apex, usually rounded at base, sometimes ridged on back, shining, 1/8″ long, less in width.

S. humilis

Fruits produced 1-2 in axils of leaves, on very short bracteate peduncles, (about 1/12-1/16″), but terminal peduncles usually longer (3/16″-5/16″) and bearing 3 fruits; pedicels glabrous, about 1/4″ long, with 2-3 pairs of bracteoles. Fruits ovate to oblong ovate, subtended by small green glabrous calyx; sepals acute, triangular; black when ripe, shining, about 5/16″ long, 1/4″ wide, acutish at apex and bearing two persistent styles; pulp sweetish, seeds 1 or 2, dark brown, shining, oblong-ovate, 3/16″ long, acutish at both ends.

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3. Snowberry — *Symphoricarpos Albus* and *symphoricarpos Chenaulti-red.*
4. Pyrocantha, San Jose (red berries).
5. Beauty berry *(Calicarpa purpurea)* (lavender berries).
6. *Eleagnus pungens* (silvery brown berries).
7. High Bush Cranberry *(Viburnum trilobium)*
8. *Cornus Alba* or *C. Stolonfera*—red branches, white berries. The cedar wax wings come to feed on these.
9. Gaultherias—any or all, including, of course, our native Salal.
10. *Stranvaesia davidiana*—red berries, evergreen foliage with red tipped branches in winter.

MRS. FREDERICK ZEUSLER

The appended lists are not an expression of cold, clean judgment—no one would agree with me that these plants are the best—they are simply a mark of my own affection and appreciation in that they have formed the pattern of my garden and have given me a great deal of pleasure. Last issue I gave my ten favorite trees and shrubs.

Some of my favorite species rhododendrons:

R. yunnanense
R. souliei
R. leucaspis
R. williamsianum
R. racemosum
R. lutescens
R. radinum
R. camtschaticum
R. deleiense
R. crebreflorum

Some of my favorite hybrid rhododendrons:

R. Azor
R. Bow Bells
R. cilpinense
R. Betty Wormald
R. Dawn's Delight
R. Van Nes Sensation
R. Faggetter's Favorite

Some of my favorite groundcovers among rhododendrons:

Gaultheria miqueliana
Gaultheria nummularifolia
Shortia galacifolia
Shortia uniflora grandiflora
Schizocodon ilicifolius
Coptis asplenifolia
Vaccinium vitis—idaea var.
Epigaea asiatica
Cornus canadensis
Leucothoe keiskei

Some of my favorite sub-shrubs:

Leucothoe davisae
Ternstroemia japonica
Arctostaphylos nummularia
Ceanothus gloriosus
Raphiolepis japonica
Skimmia fortunei
Gaulnettya wisleyensis
Ilex crenata nummularia
Pernettya rupicola
Osmanthus delavayi
Vaccinium glauco-album
Vaccinium vitis-idaea

PHYLLIS BALLARD

FOUR FLOWERING SHRUBS FOR JULY AND AUGUST

Tamarix pentandra from Eastern Europe grows from 12 to 15 feet in height with feathery foliage and long, graceful wands of pale and deep pink tiny blooms. In early spring, before growth starts, it should be pruned back, almost to the ground. It propagates easily from cuttings taken in late summer.

Rhus cotinus (now called, I believe, *coggygria)*, the Smoke Tree, is seldom more than a tall shrub and has blooms that look like pale pink, wispy smoke. It requires very little pruning, only to keep the branches from being too crowded. A dry, sunny spot is its favorite location where the leaves color beautifully in the fall.

Escallonia edinensis is a beautiful evergreen of vigorous growth and brilliantly shiny leaves. It has long arching branches literally covered with small bunches of pink flowers. When kept fairly dry, growth is not rampant, but when even moderately watered it will need constant summer pruning to keep the shrub the desired height and shape. It is easily propagated from cuttings taken in August.

Eucryphia pinnatifolia is one of the finest of all shrubs. It came originally from Chili and grows to 15 feet and over. The pure white, four petals of the flower surround a mass of yellow anthers making a rose-like flower. (In fact, it belongs to the rose family.) It almost requires a cool root run in a peaty, acid soil. Summer mulching is important and a dwarf growing shrub planted over its roots is particularly wise.

A. B. C.

Primula Florindae grows beautifully in my garden with its great mops of fragrant yellow blooms on three feet high stems. I have long wondered why Florindae should be written with a capital "F" and why the feminine ending to the word. Only recently I read in an English garden book that Mr. Kingdon Ward, its discoverer, named it for his wife.

G. T. D.

Hydrangea paniculata blooms on the tips of the stems with long, pointed cones of flowers, white, changing to pink as they grow older. It blooms on the current season's growth so should be pruned back severely—to within a few inches of the ground—in February.

Hydrangea hortensis, the variety with large, globular heads of pink, blue and white flowers should have the growing shoots thinned after it is through flowering in the fall and those stems that are left may be cut back slightly, but not heavily pruned, as the flowers come again on the old wood.

*This caption should bring a bit of nostalgia to our long-time readers as it appeared in the BULLETIN for many, many years. We are reprinting some of the "gems" of 20 years ago . . . Summer BULLETIN 1948.

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